

- 5
7. The catheter assembly of claim 6 wherein said first subcatheter has a central lumen for receiving said second subcatheter.
8. The catheter's assembly of claim 7 wherein said first subcatheter and said second subcatheter are coaxial with respect to one another.
9. The catheter assembly of claim 8 <sup>wherein</sup> where said second subcatheter extends distally of the distal tip of said first subcatheter.

### REMARKS

Applicants have filed several continuing applications based on 08/387,832 filed 5/29/01, now issued as U.S. Pat. No. 6,240,307. This patent is partially defective or inoperative for the failure to claim priority to 08/376,067, filed 1/20/95, issued as 5,553,611, which was co-pending and shared an inventor. Applicants will be seeking reissue of 6,420,307 to correct this defect, thereby removing that patent as a reference against later cases in the chain of priority. The requested amendment is made to claim priority to that earlier application. Applicants' request that the Examiner consider the reference and the propriety of the claim of priority under U.S.C. §120.

#### Pending Claims:

In this application, claims 1-9 are currently pending. Claim 6 and therefore dependant claims 7,8, and 9 are amended by this Response.

#### Rejection under 35 U.S.C. §112 (paragraph 6)

In the Office Action, a rejection was made under 35 U.S.C. §112. Claim 6 has been amended to improve the readability and reduce the ambiguity as address by the Examiner in his action.

#### Allowable Subject Matter:

The Applicant notes that the Examiner has found claims 6-9 to be allowable if rewritten. The Applicant also notes with appreciation that claims 1-5 have been allowed.

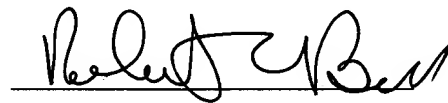
### CONCLUSION

All of the claims remaining in this application should now be seen to be in condition for allowance. The prompt issuance of a notice to that effect is solicited.

Respectfully submitted,  
ENDOCARDIAL SOLUTIONS, INC.  
By its attorneys:

Date: \_\_\_\_\_

5/14/03



Robert C. Beck  
Registration No. 28,184  
Beck & Tysver, P.L.L.C.  
2900 Thomas Ave., #100  
Minneapolis, MN 55416  
Telephone: (612) 915-9635  
Fax: (612) 915-9637

## Version with Markings to Show Changes Made

1. A mapping catheter for use in mapping cardiac electrical potentials of a patient's heart comprising:
  - a) a set of electrodes;
  - b) first positioning means having a maximum diameter that defines the maximum diameter for said catheter, coupled to said set of electrodes for spacing a portion of said set of electrodes, defined as a first subset of electrodes, apart from and not in contact with a surface of said patient's heart, at least one of said subset of electrodes being located proximate said maximum diameter and at least one of said subset being located at a location away from said maximum diameter; and
  - c) second positioning means coupled to said set of electrodes for placing a second predetermined subset of said set of electrodes into contact with a surface of said patient's heart, said second predetermined subset being different from said first subset.
2. The apparatus of claim 1 wherein said set of electrodes comprises at least twenty-four electrodes.
3. A catheter assembly for mapping the interior of a patient's heart comprising:
  - a) a first set of electrode sites defining a first electrode array, at least one of said first set of electrodes being located near the maximal diameter of catheter assembly and at least one of said first set of electrodes being located apart from said maximal diameter;
  - b) said electrode array adapted to be positioned within said patient's heart with a substantial number of said electrodes not in contact with said heart; and
  - c) a second set of electrode sites adapted to be located in contact with said patient's heart, said second set of electrode sites being different from said first set of electrode sites.

4. The catheter assembly of claim 1 wherein said first and second positioning means can be moved with respect to one another.

5. The catheter assembly of claim 1 wherein said first and second positioning means are fixed with respect to one another.

~~Kindly enter and examiner the following new claims:~~

6. A catheter assembly for mapping the interior of a patient's heart comprising:

a) ~~a first set of electrode sites~~subcatheter having a first set of electrode sites defining a first electrode array,

~~at least one of said first set of electrodes~~electrode site being located near the maximal diameter of ~~said catheter assembly and assembly;~~

~~at least one of said first set of electrodes~~ being located apart from and not in contact with a surface of said patient's heart,

~~at least one of said subset of electrodes being located proximate said maximum diameter, said electrode sites formed on a first subcatheter having a proximal end a distal end, said proximal end for manipulating and positioning said first set of electrode sites in a heart chamber;~~

electrode site being located near the minimum diameter of said catheter assembly;

b) ~~said electrode array adapted to be positioned within said patient's heart with a substantial number of said electrodes not in contact with said hear, by moving said first subcatheter proximal end; and~~heart;

c) ~~a second set of electrode sites~~ formed on a second subcatheter at least one electrode site adapted to be located in contact with said patient's heart tissue, ~~heart, said second set of electrode sites being different from said first set of electrode sites, said second set of electrodes positioned on a~~said second subcatheter, having a proximal end and a distal end, which can manipulated independently of said first subcatheter by manipulating said proximal end of said second subcatheter.

7. The catheter assembly of claim 6 wherein said first subcatheter has a central lumen for receiving said second subcatheter.

8. The catheter's assembly of claim 7 wherein said first subcatheter and said second subcatheter are coaxial with respect to one another.

9. The catheter assembly of claim 8 where said second subcatheter extends distally of the distal tip of said first subcatheter.

## Replacement Claims

1. A mapping catheter for use in mapping cardiac electrical potentials of a patient's heart comprising:
  - a) a set of electrodes;
  - b) first positioning means having a maximum diameter that defines the maximum diameter for said catheter, coupled to said set of electrodes for spacing a portion of said set of electrodes, defined as a first subset of electrodes, apart from and not in contact with a surface of said patient's heart, at least one of said subset of electrodes being located proximate said maximum diameter and at least one of said subset being located at a location away from said maximum diameter; and
  - c) second positioning means coupled to said set of electrodes for placing a second predetermined subset of said set of electrodes into contact with a surface of said patient's heart, said second predetermined subset being different from said first subset.
2. The apparatus of claim 1 wherein said set of electrodes comprises at least twenty-four electrodes.
3. A catheter assembly for mapping the interior of a patient's heart comprising:
  - a) a first set of electrode sites defining a first electrode array, at least one of said first set of electrodes being located near the maximal diameter of catheter assembly and at least one of said first set of electrodes being located apart from said maximal diameter;
  - b) said electrode array adapted to be positioned within said patient's heart with a substantial number of said electrodes not in contact with said heart; and
  - c) a second set of electrode sites adapted to be located in contact with said patient's heart, said second set of electrode sites being different from said first set of electrode sites.

4. The catheter assembly of claim 1 wherein said first and second positioning means can be moved with respect to one another.
5. The catheter assembly of claim 1 wherein said first and second positioning means are fixed with respect to one another.
6. A catheter assembly for mapping the interior of a patient's heart comprising:
  - a) a first subcatheter having a first set of electrode sites defining a first electrode array,
    - at least one electrode site being located near the maximal diameter of said catheter assembly;
    - at least one of said first set of electrodes being located apart from and not in contact with a surface of said patient's heart,
    - at least one electrode site being located near the minimum diameter of said catheter assembly;
  - b) said electrode array adapted to be positioned within said patient's heart with a substantial number of said electrodes not in contact with said heart;
  - c) a second set of electrode sites formed on a second subcatheter at least one electrode site adapted to be located in contact with said patient's heart tissue, said second subcatheter, having a proximal end and a distal end , which can manipulated independently of said first subcatheter by manipulating said proximal end of said second subcatheter.
7. The catheter assembly of claim 6 wherein said first subcatheter has a central lumen for receiving said second subcatheter.
8. The catheter's assembly of claim 7 wherein said first subcatheter and said second subcatheter are coaxial with respect to one another.
9. The catheter assembly of claim 8 where said second subcatheter extends distally of the distal tip of said first subcatheter.

## SPECIFICATION

### Version with Markings to Show Changes

~~\_\_\_\_\_This--~~ This application is a divisional of Ser. No. 08/387,832, filed May 26, 1995, ~~which is a national stage application of PCT/US93/09015, filed Sept. 23, 1993;~~ ~~which in turn is a continuation in part of both Ser. No. 07/950,448, filed Sept. 23, 1992,~~ now U.S. Pat. No. 6,240,307 which is a national stage application of PCT/US93/09015, filed Sept. 23, 1992, which in turn claims priority from U.S.S.N. 07/950,448, filed Sept. 23, 1993, now U.S. Pat. No. 5,291,549 and Ser. No. U.S.S.N. 07/949,690, filed Sept. 23, 1992, now U.S. Pat. No. 5,311,866. Applicants claim priority to: 08/387,832, filed May 26, 1995, now U.S. Pat. No. 6,240,307; Ser. No. 08/376,067 filed Aug. 20 1995, now U.S. Pat. No. 5,553,611; and Ser. No. 08/178,128 filed Jan. 6, 1994, now abandoned.--



## **Replacement Specification**

-- This application is a divisional of Ser. No. 08/387,832, filed May 26, 1995, now U.S. Pat. No. 6,240,307 which is a national stage application of PCT/US93/09015, filed Sept. 23, 1992, which in turn claims priority from U.S.S.N. 07/950,448, filed Sept. 23, 1993, now U.S. Pat. No. 5,291,549 and U.S.S.N. 07/949,690, filed Sept. 23, 1992, now U.S. Pat. No. 5,311,866. Applicants claim priority to: 08/387,832, filed May 26, 1995, now U.S. Pat. No. 6,240,307; Ser. No. 08/376,067 filed Aug. 20 1995, now U.S. Pat. No. 5,553,611; and Ser. No. 08/178,128 filed Jan. 6, 1994, now abandoned.--